



Application of : Judah Z. Weinberger  
Serial No. : 09/803,773  
Date Filed : March 12, 2001

**Clean Copy of Amended Claims**

1. A tube segment for treating a disease process in the vicinity of a luminal structure, said tube segment including radioactive material for producing radiation for treating a disease process, said tube segment being adapted to be longitudinally slid over and carried by a balloon catheter having a catheter shaft and balloon for insertion in the luminal structure, and being made of expandable and collapsible material, whereby the shape of the tube segment may be determined by the shape of the balloon.

8. An apparatus for treating a disease process in the vicinity of a luminal structure, comprising:

a balloon catheter having a shaft and an inflatable balloon; and

a tube segment adapted to be longitudinally slid over and carried by and cover said balloon, said tube segment including radioactive material, and being made of expandable and collapsible material, whereby the shape of the tube segment may be determined by the shape of the balloon.

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22. A method for treating a disease process in the vicinity of a luminal structure comprising:

inserting a balloon catheter into a luminal structure, said balloon catheter having an inflatable balloon and a tube segment, slideable over the balloon catheter, of expandable and collapsible material and which includes radioactive material;

inflating the balloon with fluid to expand the tube segment and move the tube segment closer to the interior of the luminal structure to thereby administer a radiation dose to the luminal structure;

deflating the balloon and collapsing the tube segment;  
and

removing the balloon catheter including the tube segment after a desired radiation dose has been achieved.

25. A tube segment for treating a disease process in the vicinity of a luminal structure, said tube segment including radioactive material for producing radiation for treating a disease process, said tube segment having varying concentrations of radioactive material for

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producing a radiation dose which varies along at least one dimension of the tube segment.

28. An apparatus for treating a disease process in the vicinity of a luminal structure, comprising:

a balloon catheter having a shaft and an inflatable balloon; and

a tube segment adapted to be carried by and cover said balloon, said tube segment including radioactive material having varying concentrations of radioactive material for producing radiation for treating a disease process, said tube segment producing a radiation dose which varies along at least one dimension of the tube segment.